

2020

Lower Platte North Natural Resources District

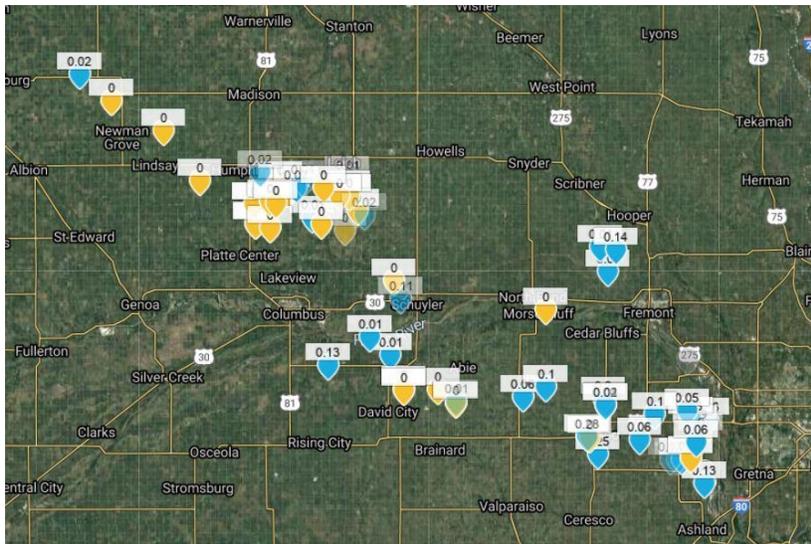
Lower Platte Basin River Plan Report

Introduction

Report period is from January 1, 2020 to December 31, 2020.

Water Quantity Activities

The District has been developing a network of wells and weather stations as shown by the map on the left. The wells have data loggers with remote read capabilities. The NRD has also set up 6 weather stations within each county. These weather stations supply weather information along with ET rates and soil moisture. The NRD is in the process of making these sites accessible to the public. The NRD will be utilizing the sites in the Special Quantity Areas for management during the pumping season.



Well Permits Issued

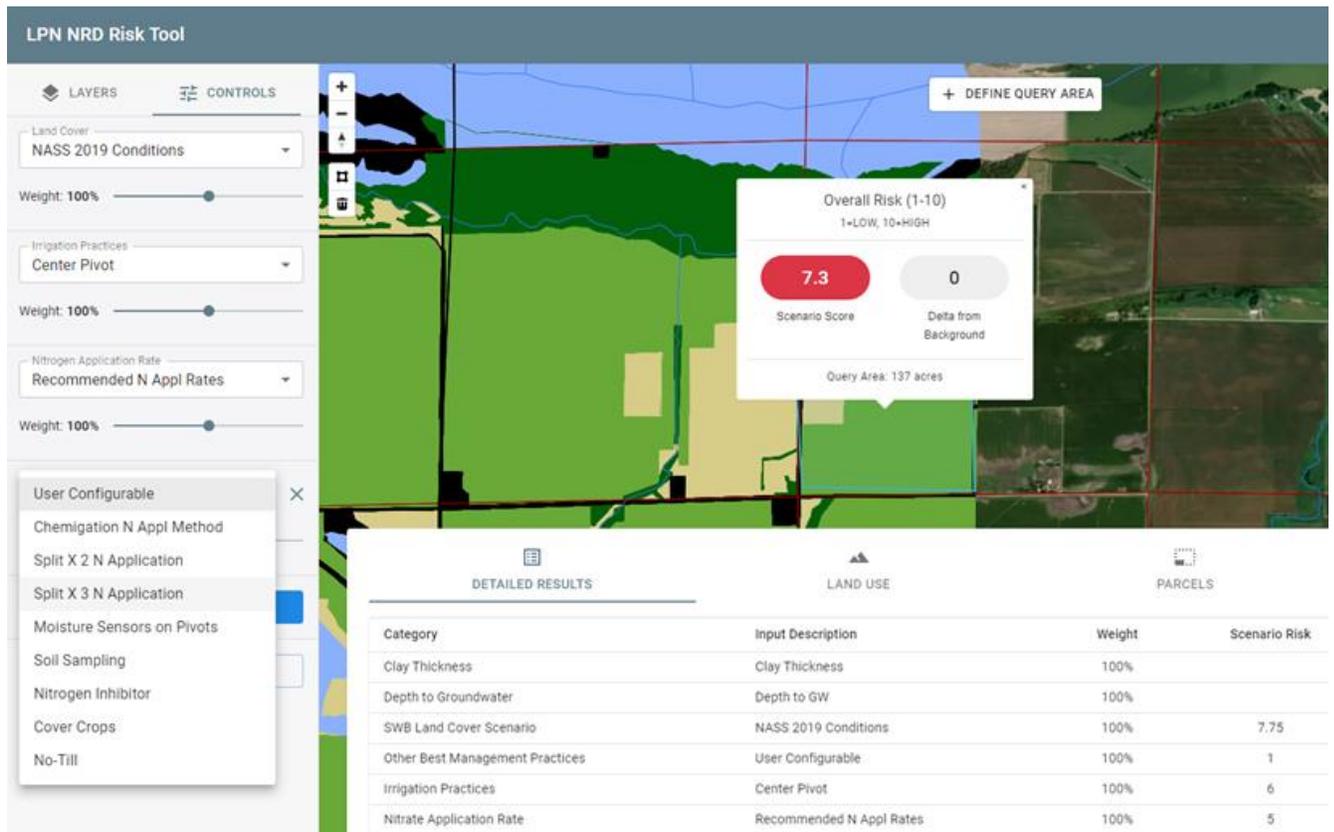
The Lower Platte North issued 29 new wells permits in 2020. There were 25 irrigation wells, which 17 were replacement: 1 commercial well, 2 municipal wells and 1 other.

Water Use Information for Irrigation Wells

Total Number of Reports from Flow Meters – 1040 in 2020 compared to 824 in 2019. SQS#1 – 5.86 in/ac; 3-year average – 2.64 in/ac; SQS#2 – 5.75 in/ac, 3-year average – 2.31 in/ac 2.84
Other Meters within the District – 5.88 in/ac in 2020.

Water Quality Activities

The NRD is working with UNL on a vadose soil sampling study along with extra water sampling within the Nitrogen Management Areas. The NRD is utilizing AEM data and boreholes to develop a Risk Assessment Tool for NRD staff and producers to utilize. This tool (draft form shown below) will allow producers to select best management practices (BMPs) and show a risk value of the BMPs selected.



Water Demand Inventory

The District is in the fifth year for obtaining required water use reports for municipalities. Industrial and other high-capacity wells report voluntarily, unless drilled after 2012. Shown on the next couple of pages are water consumption from Municipal, Industrial, Livestock and Dewatering wells.

Municipal Water Uses

City	Total Gallons (2019)	Total Gallons (2020)
Ashland	134,735,000	166,488,000
Bellwood	15,416,000	17,608,000
Newman Grove	27,469,700	32,796,900
Lindsay	48,878,300	79,117,800
Platte Center	15,949,100	15,949,100
David City	148,980,601	212,853,406
Wahoo	192,080,000	236,719,180
Yutan	38,400,000	46,538,000
Mead	19,395,000	23,250,000
Fremont	3,886,792,000	4,185,726,000
North Bend	70,831,770	85,427,000
Schuyler	318,200,000	396,926,000
Cedar Bluffs	17,006,949	31,820,553
Prague	9,145,000	9,906,000
Weston	14,050,950	15,046,500
Malmo	4,116,972	4,056,880
Ithaca	4,163,000	7,378,000
Abie	2,765,500	2,397,700
Memphis	6,324,000	8,100,000
Bruno	2,050,000	
Colon	3,720,000	
Lincoln	5,121,734,000	5,174,138,440
MUD West	8,351,265,000	9,417,157,000
Morse Bluffs	3,329,000	6,127,000

Lower Platte North Rural Water Systems supplies drinking water to Bruno and Colon with David City and Wahoo supplying the water. The total water use is already shown under the respective communities for 2020.

Industrial Water Uses

Well Reg	2019 Total Water Use	2020 Total Water Use		
G-153440	366,400	503,070	Butler County Landfill Inc	
G-171846	50,321,249.72	33,984,814.78	Western Sand and Gravel	
G-177445	26,000,000	146,000	Western Sand and Gravel	

Livestock Uses

The NRD is getting some initial numbers from the Poultry Operations. A couple of sites have dataloggers with remote reads.

Well Reg	2020 Total Water Use/Gallons	Size	Specific Use
G-152182	22,357,000	??	Cattle
G-189229	372,090	4 barns	Chickens
G-189230	157,390	4 barns	Chickens
G-185409	1,089,400.50	12 barns	Chickens
G-189228	372,090	4 barns	Chickens
G-189231	147,960	4 barns	Chickens

Dewatering Wells

These wells are located within the City of Fremont.

Well Reg	2019 Total Water Use/Gallons	2020 Reading Total Water Use/Gallons
G-181255	45,092,619	29,830,358
G-181192	80,532,353	74,748,630
G-0	3,495,125	10,201,225
G-181257	34,624,605	5,153,317

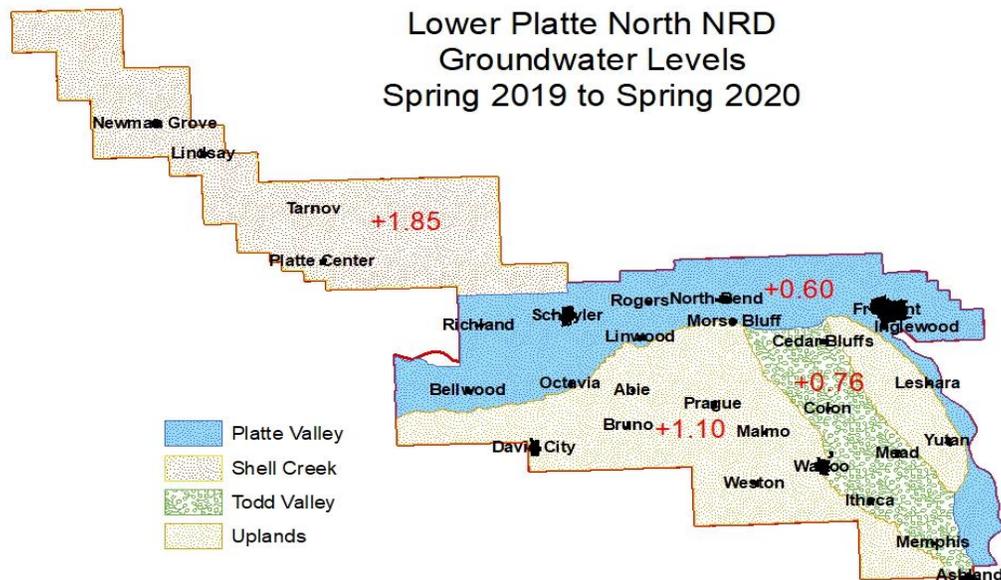
Public Outreach

The District continues to require Nitrogen/Irrigation Certification Districtwide. This year the emphasis has been on virtual classes and online testing. The goal for the upcoming year is to utilize the tools that are being developed in smaller group sessions. The District did get the online reporting site up and going with about 30% of the producers entering nitrogen and meter reports.

Water Supply Inventory

The District continues to collect static water levels districtwide with extra measurements taken in the water quantity and quality management areas. Water samples continue to be taken from the state network wells. All this information has been developed in a cloud base database for remote implementation.

Groundwater Levels 2019-2020 – As shown by the map, groundwater levels are continuing to rise from a low on most of the Groundwater Energy Level (GWEL) wells in 2012-13. Fall levels in 2020 did show a decline from Fall 2019.



Certified Acres

All Irrigated Acres			
County	Groundwater	Surface Water	Commingled
Boone	27,906.34	0.00	0.00
Butler	56,550.01	674.85	373.27
Colfax	53,201.31	238.65	1,003.33
Dodge	51,073.63	84.53	599.10
Madison	5,604.44	0.00	0.00
Platte	90,488.42	793.79	1,090.89
Saunders	102,519.07	2,504.37	2,050.97
Totals:	387,343.23	4,296.19	5,117.56
HCA Irrigated Acres			
County	Groundwater	Surface	Commingled
Boone	27,906.34	0.00	0.00
Butler	44,839.96	605.15	84.45
Colfax	46,337.73	202.35	1,003.33
Dodge	51,073.63	84.53	599.10
Madison	5,604.44	0.00	0.00
Platte	77,001.90	793.79	1,090.89
Saunders	78,278.52	2,432.48	1,819.39
Totals:	331,042.52	4,118.30	4,597.16
Non-HCA Irrigated Acres			
County	Groundwater	Surface Water	Commingled
Boone	0.00	0.00	0.00
Butler	11,710.05	69.70	288.82
Colfax	6,863.59	36.30	0.00
Dodge	0.00	0.00	0.00
Madison	0.00	0.00	0.00
Platte	13,486.52	0.00	0.00
Saunders	24,240.55	71.89	231.58
Totals:	56,300.70	177.89	520.40

VI. New Depletions and Groundwater Consumptive Uses 2020

Change ID	County	Township	Range	Direction	Section	Change Type	Change Date	Area	Wells	Use of irrigated acres	SDF	NIR feet	Acre Feet Depletion
LPN-V-020-0517	Saunders	17	6	E	31	expansion	10/12/2020	40	G-188797	Crop Production	0.67	0.75	6.03
LPN-V-020-0507	Saunders	15	8	E	15	new	10/12/2020	78		Crop Production	0.62	0.75	10.88
LPN-V-020-0504	Colfax	17	2	E	16	expansion	10/12/2020	13	G-029729	Crop Production	0.816	0.75	2.28
LPN-V-020-0505	Saunders	16	9	E	20	expansion	10/12/2020	35	G-055280	Crop Production	0.857	0.75	6.7
LPN-V-020-0502	Colfax	16	2	E	11	new	10/12/2020	38		Crop Production	0.62	0.75	5.3
LPN-V-020-0508	Platte	19	3	W	15	expansion	10/12/2020	10	G-061701	Crop Production	0.79	0.75	1.78
LPN-V-020-0503	Platte	20	4	W	18	new	10/12/2020	134		Crop Production	0.64	0.75	19.296
LPN-V-020-0516	Platte	18	1	E	24	expansion	10/12/2020	6	G-120056	Crop Production	0.96	0.75	1.296
LPN-V-020-0513	Saunders	16	7	E	10	expansion	10/12/2020	82	G-070922	Crop Production	0.64	0.75	11.8
LPN-V-020-0510	Boone	22	5	W	22	new	10/12/2020	135		Crop Production	0.39	0.75	11.85
LPN-V-020-0511	Dodge	17	7	E	3	new	10/12/2020	40		Crop Production	0.57	0.75	5.13
LPN-V-020-0506	Butler	17	4	E	33	expansion	10/12/2020	65	NEED TO C	Crop Production	0.8	0.75	11.7
LPN-V-020-0518	Madison	21	4	W	5	expansion	10/12/2020	65	G-183833	Crop Production	0.54	0.75	7.898
LPN-V-020-0514	Platte	20	3	W	24	new	10/12/2020	152		Crop Production	0.616	0.75	21.067
LPN-V-020-0512	Dodge	17	7	E	3	new	10/12/2020	55		Crop Production	0.57	0.75	7.05
LPN-V-020-0509	Boone	22	5	W	19	new	10/12/2020	120		Crop Production	0.43	0.75	11.61
LPN-V-020-0515	Boone	22	5	W	22	expansion	10/12/2020	43	G-125500	Crop Production	0.391	0.75	3.78
LPN-V-020-0519	Madison	21	4	W	18	expansion	11/9/2020	114	G-031923	Crop Production	0.697	0.75	17.878
LPN-V-013-0240	Butler	16	4	E	5	expansion	2/10/2020	68	G-158793,	Crop Production	0.631104	0.75	9.639
G-135474	Saunders	13	8	E	3	expansion	1/13/2020	50	G-135474	Crop Production	0.9	0.75	10.125
G-044537	Boone	22	5	W	23	expansion	1/13/2020	40	G-044537	Crop Production	0.396445	0.75	3.568
G-042995	Platte	18	1	W	8	expansion	3/9/2020	49.88	G-042995	Crop Production	0.695675	0.75	7.808
G-167076	Platte	19	1	W	33	expansion	3/9/2020	24.7	G-167076	Crop Production	0.46495	0.75	2.584
						Total Acres		1457.58					197.049